SPS III
Singatse Peak Services, LLC

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August 11, 2016

Mr. Jeryl Gardner, P.E., C.E.M.
Abandoned Mine Lands Program Coordinator,
NDEP Yerington Project Manager
Bureau of Corrective Actions
Nevada Division of Environmental Protection
901 S Stewart St #4001,
Carson City, NV 89701

Subject: Enhanced Evaporation Pilot Test, Progress Report #2

Dear Jeryl,

This progress report is submitted in accordance with Paragraph 35(a) of the May 4, 2016 *Agreement and Administrative Order on Consent for Response Action by Bona Fide Prospective Purchaser, Anaconda Mine, Operable Unit 8*, between the State of Nevada, Department of Conservation and Natural Resources, Division of Environmental Protection (NDEP), and Singatse Peak Services LLC (SPS). The date of the Agreement is May 4, 2016. The pilot test is being performed in accordance with the March 30, 2016 work plan dated March 30, 2016, and which was approved by NDEP on April 11, 2016.

Since the initial progress report dated June 11, 2016, NDEP requested an update be provided between the normal bi-monthly reports. The interim report was submitted via email on July 11, 2016.

Operations – Normal operation of the pilot test started on May 31, 2016. SPS uses a daily observation form to document weather conditions, pumping details such as flows and pressures and maintenance or other issues that require attention throughout the day. A summary of the operation up to the date of this report is attached to this progress report.

Volume - Approximately 583,000 gallons have been pumped through the evaporation pilot as of 8/10/16. The attached spreadsheet summarizes the daily pumping volumes. We have varied the volume of fluid applied to the evaporation panels between 10,000 and 20,000 gal/day to determine the optimal rate of fluid application. This range corresponds to 0.3 to 0.6 inches/day of applied fluid over the area of the sprinkler panels.

SPS continues to monitor VLT drain-down rates to evaluate whether recirculation of a portion of the fluids back to the liner of the VLT is occurring. This has been done by reviewing the daily flow rates measured at the VLT pond weir. The moisture sensors have not functioned properly since shortly after they were installed. Upon further discussion with the manufacturer, the sensors have likely been compromised by the low pH fluids. In addition, moisture sensors are typically used in clay to sand soils and the coarse gravel-sized material in the VLT HLP may not be compatible with measuring moisture

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levels in the ground. Additional research regarding this aspect of the project is recommended if a full-scale system were to be designed and operated.

The table below summarizes the flow rates measured at the VLT pond weir during the months of May through August for the years 2014 through 2016. By comparing the annual fluid generation rates over the past 3 years, it does not appear that the fluid generation rates have increased significantly as a result of the pilot evaporation test.

Year/Month	2014	2015	2016	Monthly Ave.
	Flow (gpm)	Flow (gpm)	Flow (gpm)	Flow (gpm)
May	4.5	3.0	3.4	**3.6**
June	3.0	3.4	2.9	**3.1**
July	2.7	2.8	3.0	**2.8**
Aug	2.6	3.0	-	**2.8**

Note: Flow rate data obtained from monthly FMS reports provided by ARC

SPS will continue to monitor and evaluate the potential for recirculation during the rest of the pilot test. In the meantime, the pumping rate has been maintained at approximately 10,000 gal/day (equivalent to 0.3 inches/day), which SPS believes to be a more sustainable rate of fluid application.

The flow rate of the system at a given pressure has reduced slightly (by approximately 10 gpm) since early June. This does not seem to be a problem by itself, rather an observation. It is thought that this could be a result of precipitate build up somewhere in the system, although this is not visible at the sprinkler heads. As a precautionary measure, SPS plans to pull the auxiliary pump for inspection later this month (in August). In order to pull the pump, the VLT fluid level needs to be increased to approximately 13 ft depth which will allow the crane to reach the pump. SPS will assess whether precipitate crust is forming on the pump inlet. Another possible cause could be increased TDS in the fluids with depth in the pond. Higher TDS would result in higher fluid density (more solids) and therefore the system would pump at a lower flow rate without increasing the pressure. The higher fluid density could also affect the calibration of the flow meter and provide a slightly lower flow reading. The possible effects of this will be investigated further during the remainder of the pilot test.

SPS requested that ARC transfer additional fluid from the slot pond to the VLT pond to increase the VLT pond depth to approximately 13 ft. SPS recommends that the fluid level in the VLT pond be maintained between 10 and 13 ft to allow for more efficient operation of the enhanced evaporation pilot. In any event, the fluid level should be maintained at approximately 5 ft above the bottom of the VLT pond to maintain adequate separation between the intake pipe of the auxiliary pump and the VLT pond liner.

Maintenance – Several maintenance items have been performed during the previous two month period, as summarized below:

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- The flow meter stopped working on 6/2/16. Upon disassembly of the flow meter, a small rock was found in the flow meter rotors which caused it to jam and not read properly. The main line filter was relocated to before the flow meter and the flow meter has functioned properly since then.
- The filter was back-flushed to reduce the pressure drop across the filter on two occasions (6/3/16 and 7/8/16).
- The Senninger sprinkler heads were replaced with Bete heads on 6/16/16 due to more efficient evaporation using the Bete heads. The Bete heads continue to operate without visible signs of clogging. No maintenance has been required on the Bete heads.
- The breaker circuit for the main pump started to trip off intermittently starting on 7/27/16. The electrician was called to inspect the system and recommended that the breaker for the main pump be replaced. The pump continued to operate with intermittent tripping of the breaker which appears to have been exacerbated by the excessive heat (>100 degrees) during this period. A new breaker was installed on 8/4/16 and a canopy has been installed to shade the electrical panel. No further tripping occurred since then.
- Normal maintenance of the electrical motors on the pumps includes inspection of the oil levels. A small amount of oil (approximately ¼ of a quart) was added to the main pump motor on 8/2/16.
- Several minor leaks have been observed at welds in the existing piping. These leaks are documented in the daily observation form with the repairs made as they occur. All of these minor leaks to date have occurred in the pre-existing piping which is located in the perimeter ditch of the VLT HLP which is located within the double liner of the VLT HLP. No leaks have been observed outside of the liner system.
- Precipitate crust continues to form on surface of the VLT HLP in the area of the sprinkler panels (before & after pumping photos are attached). Fluid appears to pond on top of this crust during pumping operations. SPS does not see this as a negative issue as the crust provides a barrier for fluids to soak into the top of the HLP. This appears to minimize the potential for recirculation of fluids back to the liner system.

In summary, the enhanced evaporation pilot test has been performing well. The 583,000 gallons pumped through the enhanced evaporation system to date, along with ongoing natural evaporation have resulted in a decrease of the VLT pond level of approximately 3.8 ft.

Please contact me at (775) 463-9600 or via e-mail at tmassey@quaterra.com if you have any questions or comments.

Sincerely,

Taurus Massey,
SPS Project Coordinator

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cc: Tom Patton, SPS
Gerald Prosalendis, SPS
Steven Dischler
Carla Consoli
Greg Lovato, NDEP
Jeff Collins, NDEP
Harold Ball, EPA
Dante Rodriguez, EPA
Gene Seidlitz, BLM
Dave Davis, BLM
Jack Oman, ARC

Attachments:

1. Photos before & after daily operation on August 3, 2016 (10,000 gal/day)
2. Final Enhanced Evaporation System layout
3. Summary of pumping results through Aug 10

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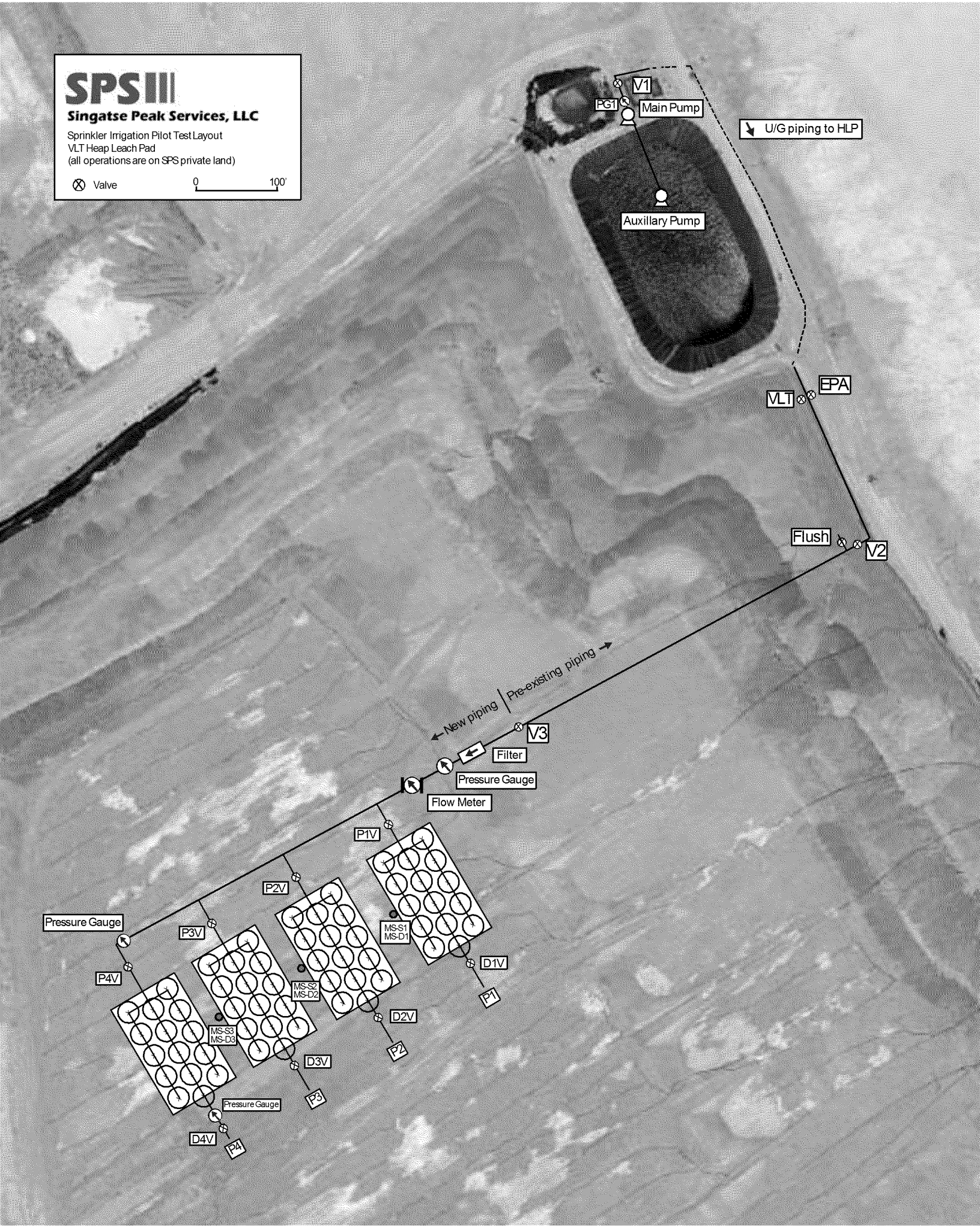
Evaporation panels before system operation on August 3, 2016 (10,000 gal/day)

Evaporation panels after system operation on August 3, 2016 (10,000 gal/day)


SPS III
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Sprinkler Irrigation Pilot Test Layout
VLT Heap Leach Pad
(all operations are on SPS private land)
Valve
0
100'
V1
PG1
Main Pump
U/G piping to HLP
Auxillary Pump
EPA
VLT
Flush
V2
New piping
Pre-existing piping
V3
Filter
Pressure Gauge
Flow Meter
P1V
P2V
P3V
P4V
Pressure Gauge
MS-S1
MS-D1
MS-S2
MS-D2
MS-S3
MS-D3
D1V
D2V
D3V
D4V
P1
P2
P3
P4
Pressure Gauge

Summary Table of Evaporation Pilot Test Through August 10, 2016

Date	Time Pumped (Minutes)	Volume Pumped (gal)	Pump rate (gpm)	Comments
5/26/2015	-	-		pre-startup
5/27/2015	15	1,450	96.7	startup
5/31/2015				
MAY TOTAL	**15**	**1,450**	**96.7**	
6/1/2015	60	5,000	83.3	
6/2/2015	60	5,000	83.3	estimate only, flow meter inop, pinhole leak on liner
6/3/2015	128	15,900	124.2	first normal day, filter cleaned, flow meter moved DS of filter
6/6/2015	114	15,000	131.6	
6/7/2015	115	15,000	130.4	2 shifts at 7,500 gal each
6/8/2015	75	10,000	133.3	
6/9/2015	73	10,000	137.0	
6/10/2015	74	10,000	135.1	
6/13/2015	79	10,000	126.6	
6/14/2015	81	10,500	129.6	Pinhole leak in perimeter ditch repaired
6/15/2015	15	1,500	100.0	High winds
6/16/2015	77	10,000	129.9	Replaced all Senninger heads with Bete heads
6/17/2015	74	10,000	135.1	
6/20/2015	76	10,300	135.5	
6/21/2015	-	-	-	Shutdown due to weld leak in perimeter ditch on liner
6/22/2015	18	2,000	111.1	Shutdown due to weld leak in perimeter ditch on liner
6/23/2015	155	20,400	131.6	Two sessions (morning/afternoon) weld leak fixed
6/24/2015	165	21,200	128.5	Two sessions (morning/afternoon)
6/25/2015	126	16,300	129.4	
6/26/2015	73	9,200	126.0	
6/27/2015	147	20,600	140.1	Two sessions (morning/afternoon)
6/28/2015	97	13,200	136.1	
6/29/2015	150	20,700	138.0	Two sessions (morning/afternoon)
6/30/2015	150	20,100	134.0	Two sessions (morning/afternoon)
JUNE TOTAL	**2,182**	**281,900**	**129.2**	
7/1/2016	77	10,400	135.1	
7/5/2016	151	19,700	130.5	Two sessions (morning/afternoon)
7/6/2016	152	19,600	128.9	Two sessions (morning/afternoon)
7/7/2016	146	20,000	137.0	Two sessions (morning/afternoon)
7/8/2016	112	12,700	113.4	Two sessions, filter cleaned between sessions
7/11/2016	87	10,000	114.9	
7/12/2016	86	10,100	117.4	
7/13/2016	87	10,000	114.9	
7/14/2016	90	10,000	111.1	
7/15/2016	81	10,000	123.5	
7/18/2016	83	10,400	125.3	
7/19/2016	39	4,900	125.6	Aux pump trip
7/20/2016	97	11,200	115.5	
7/21/2016	85	10,000	117.6	Pinhole leak in perimeter ditch repaired, filter drain repaired
7/22/2016	82	10,000	122.0	
7/23/2016	82	9,000	109.8	
7/25/2016	86	10,900	126.7	
7/26/2016	77	8,800	114.3	Aux pump trip
7/27/2016	86	10,000	116.3	
7/28/2016	81	10,100	124.7	
7/29/2016	26	2,700	103.8	Main pump trip
JULY TOTAL	**1,893**	**230,500**	**122**	
8/1/2016	67	8,000	119.4	Main pump trip, V1 replaced
8/2/2016	88	10,800	122.7	Oil added to main pump motor
8/3/2016	87	10,000	114.9	
8/4/2016	83	10,000	120.5	New breaker installed on main pump
8/8/2016	81	10,000	123.5	
8/9/2016	84	10,000	119.0	
8/10/2016	84	10,000	119.0	
AUG THRU 8/10	**574**	**68,800**	**119.9**	
Total	**4,664**	**582,650**	**125**	